



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,046	04/19/2004	Brent R. Jones	A2031Q-US-DIV	2389

7590 08/22/2005

Patent Documentation Center
Xerox Corporation
Xerox Square 20th Floor
100 Clinton Ave. S.
Rochester, NY 14644

EXAMINER

LIANG, LEONARD S

ART UNIT	PAPER NUMBER
----------	--------------

2853

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/827,046

Applicant(s)

JONES ET AL.

Examiner

Leonard S. Liang

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

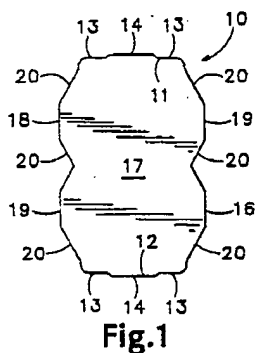
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 4-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al (US Pat 5510821) in view of Crawford (US Pat 5784089).

Jones et al discloses:

- {claim 1} An ink stick for use in a solid ink feed system of a phase change ink jet printer (figure 1); an ink stick body having a first perimeter shape (figure 1); wherein the first perimeter shape comprises at least first, second, and third perimeter segments (figure 1; left (first), top (second), and right (third) perimeter segments); wherein the first and second perimeter segments intersect one another at a first corner, forming a first intersecting angle of other than 180° (figure 1, reference 13, 20; top left corner); wherein the second and third perimeter segments intersect one another at a second corner, forming a second intersecting angle of other than 180° (figure 1, reference 13, 20; top right corner); wherein the first perimeter segment includes a first nonlinear key element (figure 1, reference 20); wherein the second perimeter segment includes a second nonlinear key element (figure 1, reference 14); wherein the third perimeter segment includes a third nonlinear key element (figure 1, reference 20); wherein none of the first,

second, or third non-linear key elements encompass the first or second corners (figure 1)



- {claim 2} wherein apart from the key elements, the first, second, and third perimeter segments are substantially linear (figure 1)
- {claim 4} An ink stick for use in a solid ink feed system of a phase change ink jet printer (figure 1); wherein the ink stick insertion perimeter includes at least three nonlinear key elements (figure 1, reference 14 (top); reference 14 (bottom), 20); wherein the first and second nonlinear key elements do not intersect one another (figure 1, reference 14 (top); reference 14 (bottom))
- {claim 5} wherein the ink stick insertion perimeter includes at least one linear perimeter segment between the first nonlinear key element and the second nonlinear key element (figure 1, reference 19)
- {claim 7} An ink stick for use in a solid ink feed system of a phase change ink jet printer (figure 1); wherein the ink insertion perimeter includes two substantially parallel lateral perimeter segments (figure 1, left and right sides); wherein the ink stick insertion perimeter includes two substantially parallel end perimeter segments (figure 1, top and bottom sides); wherein the end perimeter segments

Art Unit: 2853

are substantially perpendicular to the lateral perimeter segments (figure 1); wherein the ink stick insertion perimeter includes at least three nonlinear key elements (figure 1, reference 14, 20); wherein a first of the nonlinear key elements is on a first one of the lateral perimeter segments of the ink stick insertion perimeter (figure 1, reference 20); wherein a second of the nonlinear key elements is a second one of the lateral perimeter segments of the ink stick insertion perimeter (figure 1, reference 20); wherein a third of the nonlinear key elements is on one of the end perimeter segments of the ink stick insertion perimeter (figure 1, reference 14)

- {claim 8} the lateral perimeter segments are substantially linear apart from the nonlinear key elements; and the one end perimeter segment is substantially linear apart from the nonlinear key element (figure 1)
- {claim 9} wherein the first and third nonlinear key elements do not intersect one another (figure 1, reference 14, 20)
- {claim 10} wherein the second and third nonlinear key elements do not intersect one another (figure 1, reference 14, 20)
- {claim 11} an ink stick guide feature for guiding the ink stick in the feed direction along the feed channel (column 1, lines 5-13; entire ink stick shape guides the ink stick in the feed direction)
- {claim 12} wherein the lateral insertion perimeter segments are substantially parallel to the ink stick guide feature (figure 1; if the lateral surfaces are regarded as the guide features)

- {claim 13} wherein the end perimeter segments are at least partially transverse to the feed direction (figure 1)
- {claim 14} wherein the ink stick is adapted to be inserted into the feed channel with the lateral insertion perimeter segments substantially parallel to the feed direction (figure 4)
- {claim 15} An ink stick for use in a solid ink feed system of a phase change ink jet printer (figure 1); wherein the ink stick insertion perimeter includes two substantially parallel lateral perimeter segments (figure 1, left and right sides); wherein the ink stick insertion perimeter includes at least one end perimeter segment (figure 1, top or bottom side); wherein the end perimeter segment is oriented at an angle with respect to the lateral perimeter segments (figure 1); wherein the ink stick insertion perimeter includes at least three non linear key elements (figure 1, reference 14, 20); wherein a first of the nonlinear key elements is on a first one of the lateral perimeter segments of the ink stick insertion perimeter (figure 1, reference 20); wherein a second one of the nonlinear key elements is on a second one of the lateral perimeter segments of the ink stick insertion perimeter (figure 1, reference 20); and wherein a third of the nonlinear key elements is on the end perimeter segment of the ink stick insertion perimeter (figure 1, reference 14)
- {claim 17} the lateral perimeter segments are substantially linear apart from the nonlinear key elements; and the end perimeter segment is substantially linear apart from the nonlinear key element (figure 1)

Art Unit: 2853

- {claim 18} wherein the first and third nonlinear key elements do not intersect each other (figure 1, reference 14, 20)
- {claim 19} wherein the second and third nonlinear key elements do not intersect one another (figure 1, reference 14, 20)
- {claim 22} A solid ink feed system for a printer (figure 1; abstract)
- {claim 29} A method of inserting a solid ink stick into a feed channel of a solid ink printer (figure 1; abstract); providing an ink stick having an ink stick insertion perimeter (figure 1); moving the ink stick in a feed direction in the feed channel (figure 4); wherein at least one of the nonlinear key element shapes is oriented at least partially transverse to the feed direction (figure 1, reference 14)
- {claim 30} wherein at least one of the nonlinear key element shapes is oriented substantially parallel to the feed direction (figure 1, left and right sides)

Jones et al differs from the claimed invention in that it does not disclose:

- {claim 1} wherein each one of the first, second, and third nonlinear key elements has a shape substantially identical to the shape of a portion of an insertion opening that provides access to the solid ink feed system
- {claim 4} wherein the ink feed system comprises a feed channel having a feed direction and an insertion opening permitting insertion of an ink stick in an insertion direction, different from the feed direction, into the feed channel; an ink stick body having an ink stick insertion perimeter in a plane substantially perpendicular to the insertion direction; wherein a first of the nonlinear key elements is along a first portion of the ink stick insertion perimeter that is

Art Unit: 2853

substantially perpendicular to the feed direction; wherein the first nonlinear key element has a shape substantially identical to the shape of a portion of the insertion opening

- {claim 6} wherein each of the nonlinear key elements has a shape substantially identical to the shape of a portion of the insertion opening of the solid ink feed system
- {claim 7} wherein the ink feed system comprises a feed channel having a feed direction and an insertion opening permitting insertion of an ink stick in an insertion direction, different from the feed direction, into the feed channel; an ink stick body adapted to be inserted in the insertion direction into the feed channel, and having an ink stick insertion perimeter in a plane substantially perpendicular to the insertion direction; wherein the third nonlinear key element has a shape substantially identical to the shape of a portion of the insertion opening
- {claim 15} wherein the ink feed system comprises a feed channel having a feed direction and an insertion opening permitting insertion of an ink stick in an insertion direction, different from the feed direction, into the feed channel; an ink stick body adapted to be inserted in the insertion direction into the feed channel, the ink stick body having an ink stick insertion perimeter in a plane substantially perpendicular to the insertion direction; wherein the third nonlinear key element has a shape substantially identical to the shape of a portion of the insertion opening

Art Unit: 2853

- {claim 16} wherein as the ink stick is inserted in the insertion direction, the end perimeter segment is at least partially transverse to the feed direction
- {claim 20} wherein the shapes of the first, second, and third nonlinear key elements are substantially identical to shaped elements of the insertion opening
- {claim 21} wherein the ink stick insertion shape substantially matches an insertion opening perimeter shape
- {claim 22} a longitudinal feed channel having an insertion end and a feed direction; an insertion key plate having a key plate opening through it to provide access in an insertion direction to the feed channel; wherein the insertion direction is different from the feed direction; wherein the key plate opening has an insertion opening perimeter; wherein the insertion opening perimeter includes two lateral opening perimeter segments and a transverse opening perimeter segment; wherein the transverse opening perimeter segment intersects at least one of the lateral opening perimeter segments at an angle other than 180°; wherein the insertion opening perimeter includes a first nonlinear key element on a first one of the lateral perimeter segments of the ink stick insertion perimeter; wherein the insertion opening perimeter includes a second of the nonlinear key elements on a second one of the lateral perimeter segments of the ink stick insertion perimeter; and wherein the insertion opening perimeter includes a third nonlinear key element on the transverse segment of the ink stick insertion perimeter

Art Unit: 2853

- {claim 23} the lateral opening perimeter segments are substantially parallel one another; and the transverse opening perimeter segment is substantially perpendicular to the lateral opening perimeter segments
- {claim 24} wherein the insertion opening perimeter includes a second transverse perimeter segment; the second transverse perimeter segment is substantially parallel to the first transverse perimeter segment; and the insertion opening perimeter includes a fourth nonlinear key element on the second transverse perimeter segment
- {claim 25} wherein the lateral perimeter segments are substantially linear apart from the nonlinear key elements; and the transverse perimeter segment is substantially linear from the nonlinear key element
- {claim 26} wherein the first and third nonlinear key elements do not intersect each other
- {claim 27} wherein the second and third nonlinear key elements do not intersect one another
- {claim 28} first and second nonlinear key elements on the lateral perimeter segments correspond in shape and size to the first and second nonlinear key elements of the insertion opening perimeter; and a third nonlinear key element on the transverse perimeter segment corresponds in shape and size to the third nonlinear key element of the insertion opening perimeter
- {claim 29} aligning the ink stick insertion perimeter with an insertion opening of a key plate; inserting the ink stick in an insertion direction through the insertion

Art Unit: 2853

opening; wherein the feed direction is different from the insertion direction;
wherein aligning the ink stick insertion perimeter with the insertion opening
comprises aligning at least three nonlinear key element shapes of the insertion
opening of the key plate

Crawford discloses:

- {claim 1} wherein each of the first, second, and third nonlinear key elements has a shape substantially identical to the shape of a portion of an insertion opening that provides access to the solid ink feed system (figure 1; ink stick inserted through key plate)
- {claim 4} wherein the ink feed system comprises a feed channel having a feed direction and an insertion opening permitting insertion of an ink stick in an insertion direction, different from the feed direction, into the feed channel (figure 1, reference 24A-D, 25A-D)
- {claim 7} wherein the ink feed system comprises a feed channel having a feed direction and an insertion opening permitting insertion of an ink stick in an insertion direction, different from the feed direction, into the feed channel (figure 1, reference 24A-D, 25A-D)
- {claim 15} wherein the ink feed system comprises a feed channel having a feed direction and an insertion opening permitting insertion of an ink stick in an insertion direction, different from the feed direction, into the feed channel (figure 1, reference 24A-D, 25A-D)

- {claim 22} a longitudinal feed channel having an insertion end and a feed direction; an insertion key plate having a key plate opening through it to provide access in an insertion direction to the feed channel (figure 1, reference 24A-D, 25A-D); wherein the insertion direction is different from the feed direction (figure 1); wherein the key plate opening has an insertion opening perimeter (figure 1)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Crawford into the invention of Jones et al. The motivation for the skilled artisan in doing so is to gain the benefit of providing a keying system which prevents improper insertion of ink sticks into the feed channel. The combination naturally suggests:

- {claim 4} an ink stick body having an ink stick insertion perimeter in a plane substantially perpendicular to the insertion direction; wherein a first of the nonlinear key elements is along a first portion of the ink stick insertion perimeter that is substantially perpendicular to the feed direction; wherein the first nonlinear key element has a shape substantially identical to the shape of a portion of the insertion opening
- {claim 6} wherein each of the nonlinear key elements has a shape substantially identical to the shape of a portion of the insertion opening of the solid ink feed system
- {claim 7} an ink stick body adapted to be inserted in the insertion direction into the feed channel, and having an ink stick insertion perimeter in a plane

Art Unit: 2853

substantially perpendicular to the insertion direction; wherein the third nonlinear key element has a shape substantially identical to the shape of a portion of the insertion opening

- {claim 15} an ink stick body adapted to be inserted in the insertion direction into the feed channel, the ink stick body having an ink stick insertion perimeter in a plane substantially perpendicular to the insertion direction; wherein the third nonlinear key element has a shape substantially identical to the shape of a portion of the insertion opening
- {claim 16} wherein as the ink stick is inserted in the insertion direction, the end perimeter segment is at least partially transverse to the feed direction
- {claim 20} wherein the shapes of the first, second, and third nonlinear key elements are substantially identical to shaped elements of the insertion opening
- {claim 21} wherein the ink stick insertion shape substantially matches an insertion opening perimeter shape
- {claim 22} wherein the insertion opening perimeter includes two lateral opening perimeter segments and a transverse opening perimeter segment; wherein the transverse opening perimeter segment intersects at least one of the lateral opening perimeter segments at an angle other than 180°; wherein the insertion opening perimeter includes a first nonlinear key element on a first one of the lateral perimeter segments of the ink stick insertion perimeter; wherein the insertion opening perimeter includes a second of the nonlinear key elements on a second one of the lateral perimeter segments of the ink stick insertion perimeter; and

wherein the insertion opening perimeter includes a third nonlinear key element on the transverse segment of the ink stick insertion perimeter

- {claim 23} the lateral opening perimeter segments are substantially parallel one another; and the transverse opening perimeter segment is substantially perpendicular to the lateral opening perimeter segments
- {claim 24} wherein the insertion opening perimeter includes a second transverse perimeter segment; the second transverse perimeter segment is substantially parallel to the first transverse perimeter segment; and the insertion opening perimeter includes a fourth nonlinear key element on the second transverse perimeter segment
- {claim 25} wherein the lateral perimeter segments are substantially linear apart from the nonlinear key elements; and the transverse perimeter segment is substantially linear from the nonlinear key element
- {claim 26} wherein the first and third nonlinear key elements do not intersect each other
- {claim 27} wherein the second and third nonlinear key elements do not intersect one another
- {claim 28} first and second nonlinear key elements on the lateral perimeter segments correspond in shape and size to the first and second nonlinear key elements of the insertion opening perimeter; and a third nonlinear key element on the transverse perimeter segment corresponds in shape and size to the third nonlinear key element of the insertion opening perimeter

- {claim 29} aligning the ink stick insertion perimeter with an insertion opening of a key plate; inserting the ink stick in an insertion direction through the insertion opening; wherein the feed direction is different from the insertion direction; wherein aligning the ink stick insertion perimeter with the insertion opening comprises aligning at least three nonlinear key element shapes of the insertion opening of the key plate

Response to Arguments

Applicant's arguments with respect to claims 1-2 and 4-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2853

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S. Liang whose telephone number is (571) 272-2148. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

08/11/05

lsl 


MANISH S. SHAH
PRIMARY EXAMINER